

## ABSTRACT

A balun in which the phase shift may be reduced significantly is disclosed. The balun has three lines, i.e. a first line b, a second line a and a third line c, arranged in parallel with the ground surface. The second line a and the third line c are arranged at the same height from the ground surface GC, the longitudinal length of each respective one of the first line b, second line a and third line c are specified to be equal to a quarter ( $1/4$ ) of the wavelength at the central frequency in the working band, and the capacitance  $C_a$  between the second line a and the ground surface GC is specified to be equal to the capacitance  $C_{ab}$  between the second line a and the first line b. Furthermore, the distance  $h_3$  between the center of each respective one of the second line a and third line c in the height direction and the ground surface GC located closer to each respective one of the second line a and third line c is specified to be longer than the distance  $h_2$  between the center of the first line b in the height direction and the center of each respective one of the second line a and third line c in the height direction, or the permittivity of a dielectric  $D_3$  is specified to be less than that of a dielectric  $D_2$ .